## Koch, Kristine

**From:** Jennifer Woronets <jworonets@anchorqea.com>
**Sent:** Thursday, July 03, 2014 1:59 PM
**To:** Koch, Kristine
**Cc:** Sheldrake, Sean; King, Todd W.; Amanda Shellenberger; Carl Stivers; Jennifer Woronets; Jim McKenna (jim.mckenna@verdantllc.com); Patty Dost; Bob Wyatt
**Subject:** FW: Updated Technology Screening Maps, Cross Sections, and Depth of Impact Maps
**Attachments:** AQ_DepthOfImpact_SMA01.pdf; AQ_DepthOfImpact_SMA09U.PDF; AQ_DepthOfImpact_SMA14.pdf; Figure Set 1 and 2 EPA Technology Screening 7-2-2014.pdf

Kristine,

Please see below and attached from Amanda.

Let us know if you have any questions.

Thank you,
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**From:** Amanda Shellenberger
**Sent:** Thursday, July 03, 2014 1:51 PM
**To:** Jennifer Woronets
**Subject:** FW: Updated Technology Screening Maps, Cross Sections, and Depth of Impact Maps

Kristine -

To support the technology screening discussion next week on July 8th, and to fulfill action item #1 from the June 5th meeting, the maps and cross sections described below are provided. This information is being provided as part of the informal non-binding information exchange for the revised FS discussions.

**Technology Screening Maps and Example Cross Sections (Figure Set 1 and 2)**

Building upon the EPA Technology Screening Evaluation and cross section work submitted to the EPA on 6/2/2014, two sets of information were added to example cross sections SMA 1, SMA 9U and SMA 14. Based on changes to the EPA Technology Areas (6/9/2014), technology areas for SMA 3 and SMA 14 cross sections required updates, updated to other SMAs were minor, so technology areas for cross sections were not modified.

Figure Set 1 (a thru i) presents each SMA evaluated, the location of the cross section, and updated technology areas based on the updated EPA Technology Screening of 6/9/2014. Figure Set 2 (a.1 thru i) presents a complete set of cross sections. Note that Figures 2c, 2e, 2g, 2h, and 2i are included, but have not significantly changed since the prior submittal.

For SMA 1, SMA 9U, and SMA 14, the first cross section for each SMA shows RAL exceedances for both the Draft FS and the updated EPA RALs. It shows the depth of impact based on each set of RAL. There are two cores side by side to allow

for a comparison of removal depths based on Draft FS versus EPA RALs. Core intervals exceeding EPA's preliminary draft "source" material criteria (5X the B RALs) are also shown. This was determined as follows using EPA RALs:

- PCBs – 4000 ppb
- Dioxin/Furan (2,3,7,8-TCDD Eq)- 0.60 ppb
- Total cPAH (BapEq) – 100,000 ppb
- Total DDx – 3250 ppb

For SMA 1, SMA 9U and SMA 14, the second cross section for each SMA shows which core intervals exceed either human health or ecological PRGs based on the most recent EPA PRG table (April 11, 2014). For human health PRGs, the lowest bioaccumulation or direct contact PRG was used. For ecological PRGs, the lowest bioaccumulation or sediment PRG were used. These are listed below for reference. It should be noted that of the cores that are shown on the cross sections for SMA 1, SMA 9U and SMA 14, no data was available for dioxin/furans, so this chemical was not evaluated.

- Human health preliminary remediation goals (PRGs)
  - PCBs – 6 ppb (EPA background/HH bioaccumulation PRG)
  - Dioxin/Furan (2,3,7,8-TCDD Eq)- 0.00003 ppb (HH bioaccumulation)
  - Total cPAH (BapEq) – 106 ppb (HH Direct Contact)
  - Total DDx – 7 ppb (HH bioaccumulation)
- Ecological PRGs
  - PCBs – 40 ppb (Eco bioaccumulation PRG)
  - Dioxin/Furan (2,3,7,8-TCDD Eq)- 0.54 ppb (Eco bioaccumulation)
  - Total cPAH (BapEq) – 23,000 ppb (Eco Sediment)
  - Total DDx – 573 ppb (Eco Sediment)

**Depth of Impact Maps**

Since the cross sections for SMA 1, 9U and 14 only show a small subset of cores. We also prepared maps in plan view that show the removal depth for each theissen polygon for SMAs 1, 9U, and 14. Similar to above, there are two sets of maps showing removal depth based on Draft FS RALs and EPA RALs for each alternative B through F. Lastly, there is one map that shows the removal depths if EPA PRG exceedances were used to determine removal depth for the Alternative F footprint. One each set of maps, the thiessen polygon is hatched to show if the core is "unbounded" meaning that there are screening level exceedances in the lowest interval of the core.

- Alternative B through F
  - Draft FS Removal Depths (Depth-of-Impact with no removal deeper than 20 feet)
  - Removal Depths based on EPA RALs (no removal greater than 15 feet as described in EPA's May 16, 2014 Dredge Depth Memo)
- Alternative F
  - Removal Depths based on EPA PRG exceedances

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